REMARKS

Claims 2, 4-7, 16-31 are pending in the application.

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention as specified in the claims. Therefore, the arrangement with at least two jointing stone members as claimed in claims 6 and 7 must be shown or the features canceled from the claims.

Applicant resubmits drawing Fig. 7 showing the features of claims 6 and 7. It is respectfully submitted that no new matter has been added as the configuration shown in drawing Fig. 7 is based on the illustration of Fig. 2 except that the jointing stone is interrupted so as to indicate that it is comprised of at least two jointing stone members 25a. It is also shown that the jointing stone members 25a together have a length that is greater than the length of the cutting edge but that each individual one has a length that is shorter than the cutting edge. Page 12 of the specification clearly sets forth that the jointing stone can be comprised of two or more jointing stone members that are positioned at a minimal axial spacing relative to one another. The minimal axial spacing is further defined as the spacing that is provided in the stroke direction between the jointing stone members. It is further set forth that the individual jointing stone members are secured by the holders 17, 18. The holders 17,18 are clearly illustrated in Figs. 1, 2, 3, 4, 5; the axial direction is indicated by arrow 29 in drawings Figs. 2, 3, 4. Moreover, it is specified that the two jointing stone members are arranged on the jointing device such that, in the center position relative to the cutting edge 9, their ends facing away from one another project axially past the cutting edge 9. The center position of the jointing device is illustrated in Fig. 1.

Therefore, the description sets forth that:

a) the jointing stone members are minimally spaced apart in the axial direction,

b) act on the blade edge 9 as illustrated in Fig. 1,

c) are secured by the holders 17, 18,

d) have opposed ends projecting axially past the cutting edge 9.

Based on this disclosure, there is no other arrangement possible or conceivable than that illustrated in Fig. 7. No new matter is introduced by the illustration.

Claim Rejections - 35 U.S.C. 112

Claims 6-7 stand rejected under 35 U.S.C. 112, 2nd paragraph, as being indefinite.

Claim 6 is now made to depend from claim 28. Claim 28 does not include the language "length of the jointing stone is greater than the cutting edge".

Reconsideration and withdrawal of the rejection of claims 6 and 7 under 35 USC 112 is therefore respectfully requested.

Rejection under 35 U.S.C. 103

Claims 1, 2, 4-8, 16, 17, 19-27 stand rejected under 35 U.S.C. 103(a) as being unpatentable over *Theien* and *Englert*.

Claims 3 and 18 stand rejected under 35 U.S.C. 103(a) as being unpatentable over *Theien* and *Englert* in view of *Mann*.

The examiner continues to cite the two references U.S. 4,581,856 and DE 39 27 230 as primary references and U.S. 2,864,210 in regard to the feature of performing during jointing at least two relative strokes in opposite directions.

The two primary references U.S. 4,581,856 and DE 39 27 230, show completely different devices that cannot be combined with one another. In the present invention the goal is to optimize jointing of cutting edges by means of oscillating movement of a long jointing stone (longer than the cutting edge) with minimal stroke length. The principal features are therefore:

- the jointing stone is long (has a great length), and
- the jointing stone performs a very small stroke during the jointing process.

As an example, it is mentioned in the specification that the jointing stone is longer by half the jointing stroke length relative to the cutting edge. In this way, the jointing stone is in contact with the cutting edge in all axial positions. An exemplary stroke length is approximately 20 mm so that the jointing stone must travel only a minimal stroke length in order to optimally joint the cutting edge (see paragraph bridging pages 8 and 9 of the specification).

The decisive feature of the present invention is therefore that the jointing stone 25 acts on the entire length of the cutting edge of the cutting blade 3 while only a very short axial stroke is performed. An axial relative movement is carried out between the cutting edge 9 and the jointing stone 25. Such axial relative movement between cutting blade 3 and jointing stone 25 already indicates that the cutting edge must be straight and cannot

have any profiling. When the cutting edge 9 of the cutting blades 3 is profiled, an axial stroke cannot be performed during the jointing process. The axial stroke however is a mandatory condition in regard to the present invention in order to obtain an excellent jointing quality.

U.S. 4,581,856 discloses an apparatus that is designed to simplify jointing operations on various spindles. As stated in the OBJECTS AND ADVANTAGES (col. 4, lines 52-58), "the primary aim ... is to make it possible to equalize the effective radii of plural cutting elements (whether straight or profiled) ... by in-situ action and **without the machine having any special mounting pads or built-in mechanisms created for that purpose**" (emphasis added).

The apparatus therefore has a combined fixture 42 with carrier 41 that holds the jointing stones 40 and 140 for jointing straight as well as profiled edges. The fixture and carrier assembly 41, 42 allows radial advancement toward the spindles but axial movement of the jointing stones is not possible and obviously not contemplated as the goal is a simplification of the jointing apparatus.

Fig. 4 of the U.S. patent shows a cutting element C1 having a profiled cutting edge E1. Accordingly, a jointing stone 40 is provided with a matching jointing edge 40a. In order to joint the cutting edge E1, only radial movement as an advancing movement can be realized between the cutting element C1 and the jointing stone 40. During the jointing process a relative axial movement between the cutting element C1 and the jointing stone 40 is impossible.

Fig. 6 of U.S. 4,581,856 shows the possibility of jointing a straight cutting edge of the cutting element C with jointing stone 140 having a jointing edge 140a that is straight. The jointing stone 140 is positioned in a carrier 41 with which the jointing stone 140 can be advanced in the direction toward the spindle VR. A movement of the jointing stone 140 in the axial direction of the spindle VR is not provided for. The jointing stone 140 cannot perform an axial movement relative to the cutting element C.

The cited U.S. patent 4,581,856 therefore discloses only a radial advancing movement of the jointing stone and no axial movement during the jointing process.

The cited German reference 39 27 230 shows in Fig. 1 three jointing stones 13 for performing straight jointing with great axial stroke length. The jointing stones 13 are moved

axially relative to the cutting blades to be jointed. As also shown in Fig. 1, the jointing stones 13 are very narrow and have also very short jointing edges. Because of this configuration, the narrow jointing stones wear quickly. Moreover, such a device entails the problem that because of the three narrow jointing stones 13 conically jointed sections are produced on the cutting blades so that in the end a stepped cutting edge is produced. (The cited U.S. patent 4,581,856 makes reference to such a jointing process with narrow stones in column 3, lines 25ff, in connection with jointing straight cutting edges.)

The cited German reference 39 27 230 therefore teaches that for jointing a straight cutting edge of a cutting blade narrow jointing stones are to be used that perform a relatively large axial stroke relative to the cutting blade. This has the disadvantage that the jointing stones wear very quickly and the cutting edge after the jointing process has an irregular stepped shape that can be removed subsequently only at great expense.

The cited U.S. patent 4,581,856 on the other hand teaches to perform only radial advancement of the jointing stone 140 according to Fig. 6 and to not perform axial movement relative to the cutting element C as an improvement over several narrow jointing stones that must be moved axially.

There is no suggestion or motivation to be derived from the two references to use during the jointing process relatively long jointing stones and to perform during the jointing process small axial strokes relative to the cutting blade to be jointed and to perform at least two strokes when doing so because the U.S. patent teaches to employ a long straight jointing stone that cannot carry out axial movement while the German reference teaches multiple short jointing stones distributed across a part of the length of the cutting edge to be jointed and long axial strokes in order to be able to joint the entire length of the cutting blade. These are two contrary principles (long jointing stone covering the entire length of the cutting edge; no axial movement *versus* several very short jointing stones spaced across a portion of the cutting edge and long jointing strokes in the axial direction).

There is no motivation to modify the configuration of the apparatus of the U.S. patent 4,581,856 such that axial strokes are to be performed with a jointing stone that already covers the entire length of the cutting edge to be jointed. The examiner arrives at the conclusion of obviousness clearly in hindsight and in knowledge of the solution presented in the instant application. When objectively looking at the cited prior art

references there is no motivation or suggestion to employ for the purpose of jointing straight cutting edges a single jointing stone having a length greater than the cutting edge and to perform with such a long jointing stone short axial strokes across the axial length of the cutting edge.

The examiner's argument that the U.S. patent 4,581,856 already discloses to carry out a stroke in the longitudinal or axial direction of the cutting edge during the jointing process based on the disclosure of col. 3, lines 24-38 so that it is obvious to perform with the jointing stone according to Fig. 4 and Fig. 6 of U.S. 4,581,856 a jointing operation in the axial direction during the jointing process is not convincing. In regard to Fig. 6 of the U.S. patent, the Examiner employs hindsight in order to arrive at his conclusion. In the description of U.S. patent 4,581,856 (col. 3, lines 24-38) narrow jointing stones are mentioned which are used for jointing straight cutting edges, much the same way this is done in the cited German reference. However, the known method discussed in the U.S. patent is considered to be disadvantageous: narrow stones must be axially moved which requires a complex apparatus and leads to uneven cutting edges. The cited U.S. patent therefore proposes in accordance with Fig. 6 a jointing stone having a length that is greater than the length of the cutting edge so that the axial movement of the jointing stone 140 can be dispensed with. This is done expressly for simplifying the jointing operation and the jointing apparatus. Enabling axial movement of the fixture/carrier 41, 42 would require a considerable technical expenditure that flies in the face of the defined goal of simplification set forth in col. 4, lines 52-28, of U.S. 4,581,856.

Therefore, there is no motivation to axially move the jointing stone 140 according to Fig. 6 during the jointing process in the axial direction of the spindle VR. It is the goal of the cited U.S. patent to eliminate such axial movement. It is also not apparent why such an axial movement of the jointing stone 140 according to Fig. 6 would be of any benefit because the jointing stone 140 has at least the same length as the cutting edge of the cutting element to be jointed. Why should a person skilled in the art consider axially moving the long jointing stone 148 across the cutting element C when there is absolutely no need to do so as the entire length is already jointed by the jointing stone 140 and the long jointing stone has been devised according to the cited U.S. patent specifically to eliminate multiple narrow stones and axial movement for the purpose of simplifyfing the

jointing operation and apparatus.

The inventive feature according to which the jointing stone is moved with short axial stroke lengths and without radial advancement provides for very smooth surfaces of the cutting edges. This provides minimal wear and a long service life of the cutting edges and is a great improvement in the field of jointing.

The examiner indicated that claims 6 and 7 will be rejected in view of U.S. 993,398 should the indicated 112 problems be overcome. Applicant cannot identify a jointing stone that is comprised of at least two jointing stone members arranged in the stroke direction at a relative spacing to one another. The reference discloses a single emery wheel 17 (Fig. 4) for grinding and a single emery block 18 for jointing (Fig. 5) mounted on the bar 14, respectively. Fig. 3 shows gage rolls 16 for properly positioning the knives.

Reconsideration and withdrawal of the rejection of the claims pursuant to 35 USC are therefore respectfully requested.

CONCLUSION

In view of the foregoing, it is submitted that this application is now in condition for allowance and such allowance is respectfully solicited.

Should the Examiner have any further objections or suggestions, the undersigned would appreciate a phone call or **e-mail** from the examiner to discuss appropriate amendments to place the application into condition for allowance.

Authorization is herewith given to charge any fees or any shortages in any fees required during prosecution of this application and not paid by other means to Patent and Trademark Office deposit account 50-1199.

Respectfully submitted on August 24, 2005,

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GEH
Encl.: - time extension petition (1 sheet) and PTO-2038 (1 sheet);
- replacement drawing sheet Fig. 7 (1 sheet)